GENERAL DESCRIPTION

The CM8300 is the Multiple-LED Current Balancer. It can be used for LED application. By implementing the Daisy Configuration, users can design a single network that can drive many parallel LEDs, resulting in dramatic total system cost reduction.

The CM8300 gets its power through the LED and therefore does NOT require an additional power supply. The maximum DC voltage is 5 VDC. Each pin can handle up to 10mA.

FEATURES

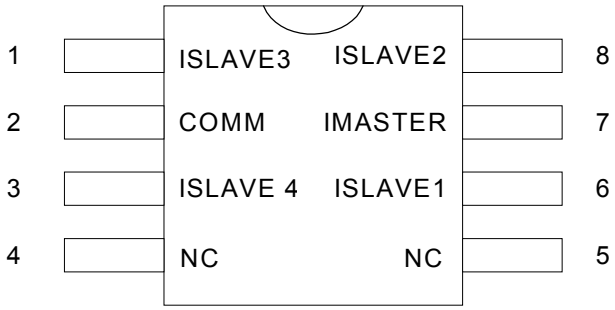
- Ideal for 2 to unlimited-LED design
- Current Sense for photo-couple
- Self powered without additional power supply
- 8-Pin PSOP and PTSSOP, SOT-23-6 & SOT-89 Package
- Absolute Maximum Voltage is 5VDC
- +/- 2.5% Current Tracking Accuracy

APPLICATIONS

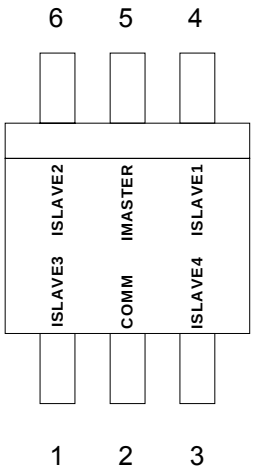
- Multiple LED in LCD Backlight

PIN CONFIGURATION

PSOP-8 (PS08)/PTSSOP-8 (PT08)
Top View



SOT-23-6 (M26)
Top View



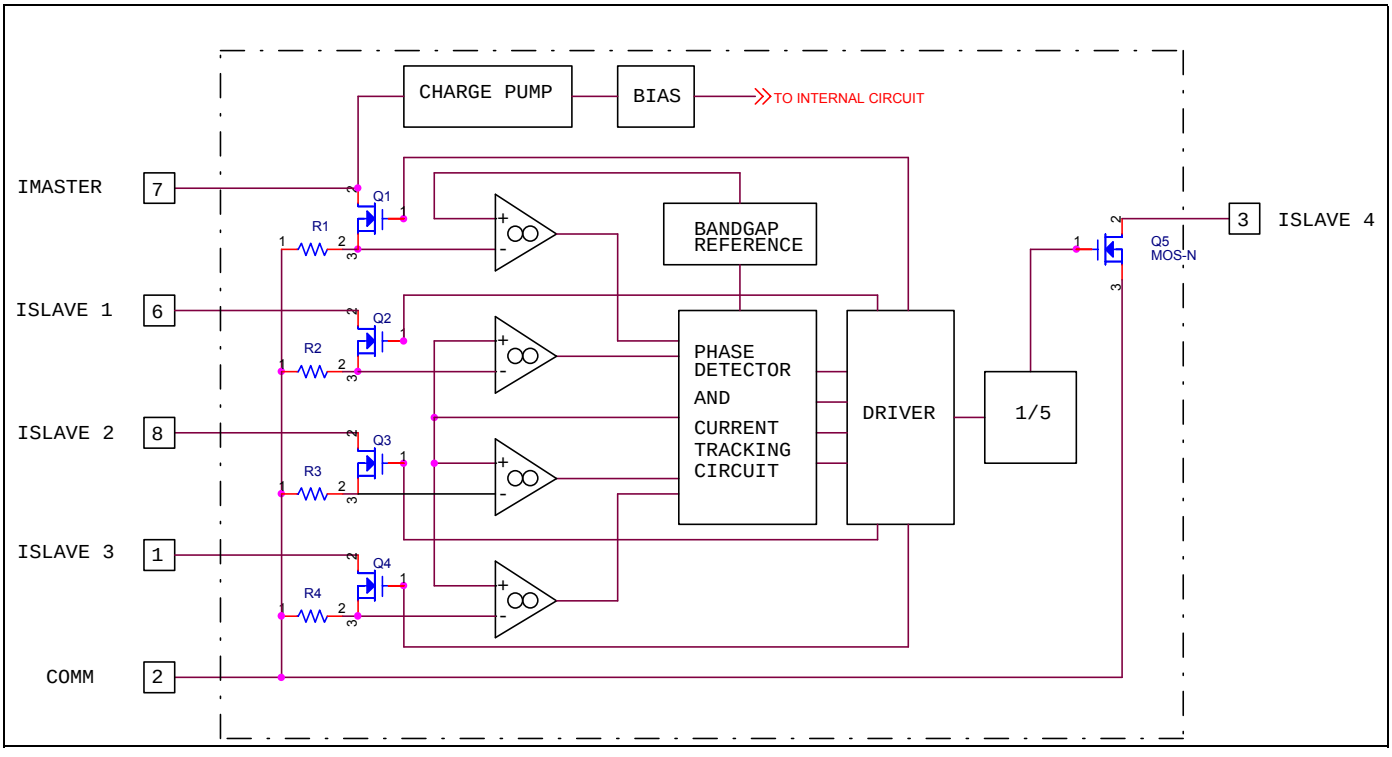
PIN DESCRIPTION

Pin No.	Symbol	Description	Operating Rating			
			Min.	Typ.	Max.	Unit
1	ISLAVE3	Current output pin. Connect to one of the slave lamp and the current will follow the IMASTER		30	50	mA
2	COMM	Common pin for lamp network		30	50	mA
3	ISLAVE4	Current output pin. Connect to one of the slave lamp and the current will follow the IMASTER		30	50	mA
4	NC					
5	NC					
6	ISLAVE1	Current output pin. Connect to one of the slave lamp and the current will follow the IMASTER		30	50	mA
7	IMASTER	Current output pin. Connect to master lamp. Connect a serial resistor to ensure the lamp is master		30	50	mA
8	ISLAVE2	Current output pin. Connect to one of the slave lamp and the current will follow the IMASTER		30	50	mA

ORDERING INFORMATION

Part Number	Temperature Range	Package
CM8300IS	-40℃~+85℃	PSOP-8 (PS08)
CM8300IT	-40℃~+85℃	PTSSOP-8 (PT08)
CM8300IM26	-40℃~+85℃	SOT-23-6 (M26)

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied

Current on IMASTER, ISLAVE1, ISLAVE2, ISLAVE3 …. 50mA
Voltage on IMASTER, ISLAVE1, ISLAVE2, ISLAVE3 …. 5V
Current on ISENSE …… 30mA

Junction Temperature …… +150°C
Storage Temperature …….. -65 °C to +150°C
Lead Temperature (Soldering 10 Sec.) …….. +260°C
Thermal Resistance (θ_{JA}) …….. +150℃/W

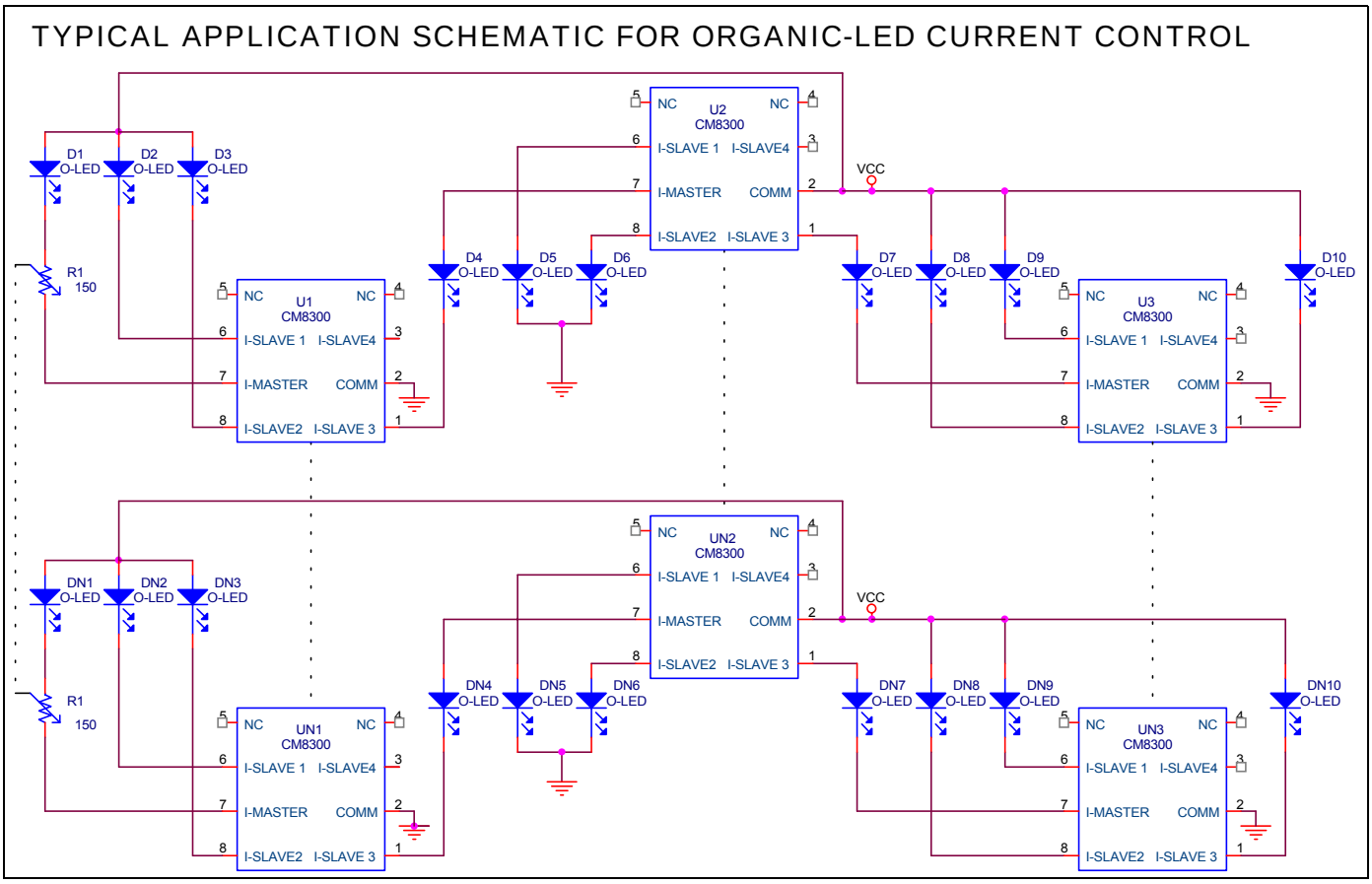
OPERATING CONDITIONS

Temperature Range ..... -40°C to +85°C

ELECTRICAL CHARACTERISTICS **(Unless otherwise stated, these specifications apply T_A=25°C)** maximum ratings are stress ratings only and functional device operation is not implied.

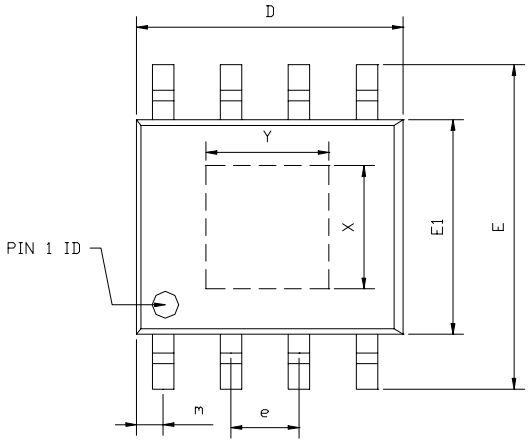
Symbol	Parameter	Test Conditions	CM8300			Unit
			Min.	Typ.	Max.	
Current Tracking Test, ISLAVE1, ISLAVE2, ISLAVE3 = 5V and IMASTER=1mA						
	ISLAVE1		29.98	30	30.02	mA
	ISLAVE2		29.98	30	30.02	mA
	ISLAVE3		29.98	30	30.02	mA
	ISLAVE4		29.98	30	30.02	mA

TYPICAL APPLICATION SCHEMATIC FOR ORGANIC-LED CURRENT CONTROL



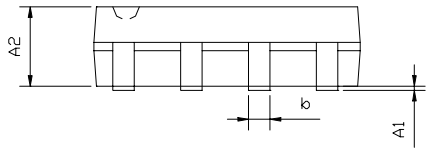
PACKAGE DIMENSION

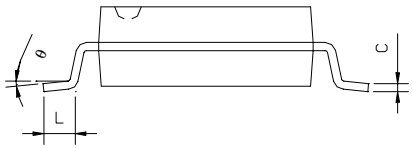
8-PIN PSOP (PS08)



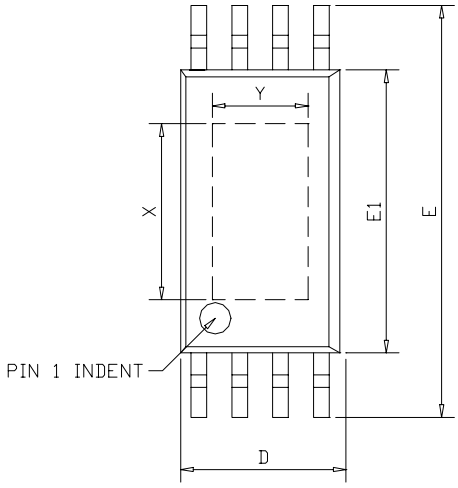
SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHS		
	MIN	NOM	MAX	MIN	NOM	MAX
A1	0.10	---	0.25	0.004	---	0.010
A2	1.40	---	1.55	0.055	---	0.061
b	0.30	---	0.51	0.012	---	0.020
C	0.15	---	0.26	0.006	---	0.010
D	4.60	---	5.06	0.169	---	0.199
E	5.79	---	6.20	0.228	---	0.244
E1	3.76	---	4.01	0.148	---	0.158
e	---	1.27	---	---	0.050	---
L	0.38	---	0.69	0.015	---	0.035
m	0.43	---	0.69	0.017	---	0.027
θ	0°	---	8°	0°	---	8°

EXPOSED PAD DIMENSION : (mm)
PAD SIZE: X=2.3 ; Y=2.3



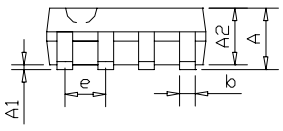


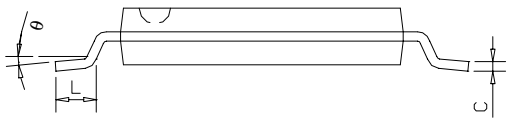
8-PIN PTSSOP (PT08)



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHS		
	MIN	NOM	MAX	MIN	NOM	MAX
A1	0.05	---	0.15	0.002	---	0.006
A2	---	1.00	1.05	---	0.039	0.041
b	0.25	---	0.30	0.010	---	0.012
C	---	0.127	---	---	0.005	---
D	2.90	3.05	3.10	0.114	0.120	0.122
E	6.20	6.40	6.60	0.244	0.252	0.260
E1	4.30	---	4.50	0.169	---	0.177
e	---	0.65	---	---	0.026	---
L	0.50	---	0.70	0.020	---	0.028
θ	0°	---	8°	0°	---	8°

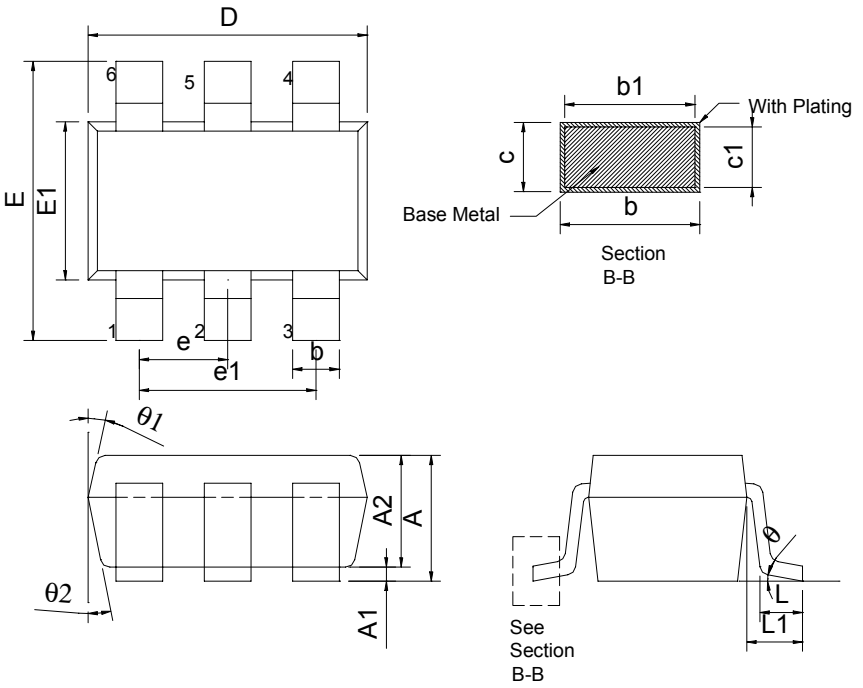
EXPOSED PAD DIMENSION : (mm)
PAD SIZE: X=2.8; Y=1.524





PACKAGE DIMENSION

SOT-23-6 (M26)



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.05	---	1.35	0.041	---	0.053
A1	0.05	---	0.15	0.002	---	0.006
A2	1.00	1.10	1.20	0.039	0.043	0.047
b	0.25	---	0.55	0.010	---	0.020
b1	0.25	0.40	0.50	0.010	0.016	0.018
c	0.08	---	0.20	0.003	---	0.008
c1	0.08	0.11	0.15	0.003	0.004	0.006
D	2.70	2.90	3.00	0.106	0.114	0.118
E	2.60	2.80	3.00	0.102	0.110	0.118
E1	1.50	1.60	1.70	0.059	0.063	0.067
L	0.35	0.45	0.55	0.014	0.018	0.022
L1	0.60 REF			0.024 REF		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
θ	0°	5°	10°	0°	5°	10°
θ1	3°	5°	7°	3°	5°	7°
θ2	6°	8°	10°	6°	8°	10°

IMPORTANT NOTICE

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